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What is claimed is:

1. A precision Multi-dimensional capacitive transducer comprising:

a pickup plate;

a plurality of drive plates disposed on opposing sides of said pickup plate, means for supporting said drive plates, each of said drive plates being composed of an electrically conductive material;

a plurality of support springs engaging and supporting said center electrode, said support springs comprising planar springs.

- 2. The capacitive transducer of Claim 1 wherein said drive plates comprise four plates.
- 3. The capacitive transducer of Claim 2 wherein said support springs comprise four planar springs.
- 4. The capacitive transducer of claim 3 wherein electrode comprises a planar electrode and said support springs lie on the same plane as said center electrode.
- 20 S A precision Multi-dimensional capacitive transducer comprising:
 a lower drive plate electrode assembly, said lower assembly including a plurality

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of drive plates, said drive plates being composed of electrically conductive material;

an upper drive plate electrode assembly, said upper assembly including a plurality of drive plates, said drive plates being composed of electrically conductive material;

a center electrode;

said lower drive plate electrode assembly and said a upper drive plate electrode assembly being disposed on opposing sides of said center electrode;

a plurality of support springs engaging and supporting said center electrode, said support springs comprising planar springs.

- 6. The capacitive transducer of Claim 5 wherein said drive plates comprise four plates.
- 7. The capacitive transducer of Claim 5 wherein said support springs comprise four planar springs.
- 8. The capacitive transducer of claim wherein said center electrode comprises a planar electrode and said support planar support springs lie on the same plane as said center electrode.



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- 9. The capacitive transducer of Claim 8 wherein said electrode comprises metal foil.
- 10. The capacitive transducer of Claim 9 wherein said foil electrode comprises highstrength beryllium copper alloy.
 - 11. The capacitive transducer of Claim 10 wherein said foil electrode and said support springs are formed from a single sheet of foil.
 - 12. The capacitive transducer of Claim 10 wherein said foil electrode and said support springs are formed from a single sheet of foil by photochemical etching.
 - 13. The capacitive transducer of Claim 11 wherein said drive plates comprise an electroconductive material disposed on an aluminum oxide substrate.
 - 14. The capacitive transducer of Claim 13 wherein said electroconductive material comprises pure copper.
 - 15. The capacitive transducer of Claim 13 wherein said electrode comprises a material having a thermal expansion coefficient similar to aluminum oxide.

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- 16. The capacitive transducer of Claim 15 wherein said electrode material is molybdenum.
- 17. The capacitive transducer of Claim 9 wherein said transducer includes first spacer means disposed between said lower drive plate and said electrode and a second spacer means disposed between said upper drive plate and said electrode.
 - 18. The capacitive transducer of claim 17 wherein said electrode comprises copper foil having a thickness in the range of 0.0005 and 0.005 inches.

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